Palladiumelektrolyt

Palladium Plating Guide for Beginners
Brush / Tampon and Bath Plating
This guide is beginner-friendly, practical, and aligned with internationally used sources and training standards. It applies equally to brush/tampon plating and bath plating using a palladium electrolyte.
Palladium is an excellent alternative to platinum and is widely used as a barrier layer. It is ideal for nickel-free jewelry, as it can replace nickel without compromising appearance or durability.

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1. What Is Palladium Plating?

Palladium plating is an electrochemical process that deposits a bright, silvery-white palladium layer onto a conductive surface. The coating is decorative and functional, offering excellent corrosion resistance and color stability.

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2. Electrolyte & Layer Properties

- **Palladium content: approx. 2, 5, or 10 g/L**
- **higher metal content → faster deposition and thicker layers**
- **achievable thickness: up to ~3 µm without color change**

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3. Suitable Substrates

Recommended:

- **Nickel (polished)**
- **Gold / gold flash**

Conditionally suitable:

- **Copper or brass (with nickel underlayer)**

Not recommended:

- **Steel or iron without undercoating**
- **Aluminum without special pretreatment**

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4. Safety

- **not classified as hazardous, but irritating**
- **Wear protective gloves**
- **Wear safety goggles**
- **Avoid skin and eye contact**

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5. Surface Preparation

Polishing

- **Polish surface to high gloss**
- **Palladium exactly reproduces the surface finish**

Cleaning & Degreasing

- **Thoroughly degrease with electro cleaner**
- **Clean clamps and contact points**
- **Handle only with gloves afterward**

Activation

- **Briefly activate surface**
- **recommended activation voltage: ~2.7 V**

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6. Electrical Connections

- **Positive (+): handpiece with electrode and fabric/cotton pad**
- **Negative (–): workpiece with crocodile clip**

Electrodes:

- **Platinum or graphite anode (recommended)**

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7. Technical Parameters (Beginner Guidelines)

- **Voltage: start at ~3 V**
- **Temperature: minimum room temperature**
- **Electrolyte: liquid or thickened (gel former optional)**

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8. Brush / Tampon Palladium Plating
Typical uses: jewelry, repairs, partial areas
Procedure:

1. **Soak pad with palladium electrolyte**
2. **Connect polarity correctly**
3. **Plate using light, circular movements**
4. **Build a uniform palladium layer**

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9. Palladium Bath Plating
Additional notes:

- **Center the workpiece in the bath**
- **Use platinum or graphite anodes**
- **Never use steel anodes**

Procedure:

1. **Bring electrolyte to room temperature**
2. **Connect workpiece (negative)**
3. **Connect anode (positive)**
4. **Slowly increase voltage**
5. **Build desired thickness**
6. **Remove and rinse**

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10. Post-Treatment

- **No drying or curing time required**
- **Rinse with water**
- **Polish gently with a soft cloth and care product**

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11. Common Beginner Issues
Dull finish: insufficient polishing, voltage too low
Uneven deposit: uneven movement (brush), poor anode placement (bath)
Poor adhesion: missing nickel or gold underlayer, poor cleaning or activation

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Key takeaway:
Palladium provides a bright, durable, nickel-free barrier – proper surface preparation and activation ensure success.